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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/677,630	10/03/2000	Leon Forman	320-4(a)	5469

7590 05/06/2003

THOMAS M. GALGANO, Esq  
Galgano & Burke  
300 Rabro Drive  
Suite 135  
Hauppauge, NY 11788

[REDACTED] EXAMINER

PALABRICA, RICARDO J

[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

3641

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

SK

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/677,630	FORMAN, LEON	
	Examiner Rick Palabrica	Art Unit 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 05 March 2003.

2a) This action is FINAL.                  2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-10 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) Notice of References Cited (PTO-892)                  4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)                  5) Notice of Informal Patent Application (PTO-152)  
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.                  6) Other: \_\_\_\_\_

## DETAILED ACTION

1. Applicant's amendment in Paper No. 6, which revises independent claim 1, is acknowledged.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Bernardet (U.S. 5,215,703). Bernardet discloses a high-flux neutron generator tube comprising an electron bombardment ion source, high voltage acceleration stage and an occluded reaction target, capable of generating neutrons of 14 MeV (see columns 4 and 5). The device includes a deuterium-tritium gas mixture that is ionized (see column 4, lines 65+).

As to the specific limitation in claim 1 regarding the ion source, Bernardet discloses an embodiment in Fig. 7 showing an ion exit slit 32 and focusing apertures 21. He also discloses a means for generating an electron beam that creates ions by collision with the enclosed gas by the arrangement of an anode 70 and cathode 52. The electrons emitted by the negative cathode are attracted to the positive anode, and such flow of electrons constitutes an electron beam (see also column 7, lines 61+). The ions produced by electron collisions in the gas are accelerated and focused on the target 4

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by the configuration of accelerator electrodes 2. This focusing of the ions by means of the accelerating electrode configuration and the applied voltage on these electrodes constitute the rasterizing means.

As to the dimensions of the slit and focusing apertures being greater than 3 mm, note that Bernardet discloses that cathode 51 has a diameter of between 10 and 15 cm. Based on a value of 15 cm, the exit slit and focusing aperture in Fig. 7 have values of approximately 11.5 mm and 16 mm, respectively. Note that while patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of the claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

As to "wherein" clauses in claims 3, 4 and 8, and the clause after "filament" in claim 7, these clauses are essentially method limitations or statement of intended or desired use. These clauses, as well as other statements of intended use do not serve to patently distinguish the claimed structure over that of the reference, as long as the structure of the cited references is capable of performing the intended use. See MPEP 2111-2115.

See also MPEP 2114 that states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531.

[A]pparatus claims cover what a device is, not what a device does."  
Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525,1528.

As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

The device in the cited reference is capable of being used in the same manner and for the intended or desired use as the claimed invention.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernardet in view of Reifenschweiler ("Neutrons from Small Tubes – Philipps Tube: Continuous or Pulsed Operation," Nucleonics, Vol. 18, No. 12, December 1960).  
Bernardet discloses the applicant's claims except for the hollow needle and the distance between the exit slit and the needle.

Reifenschweiler discloses in Fig. 2 a sealed neutron generator tube comprising an electron bombardment source, a high voltage acceleration stage (i.e., accelerating space), and a self-loading target, said target being mounted in a hollow needle. He teaches the use of a needle configuration to increase the neutron yield (see page 70, 1<sup>st</sup> column, lines 11+). He also teaches that there are different possible variations on the

basic electrode combination of ion source, accelerator electrode and target. He teaches one such variation in Fig. 2 wherein the target is placed at the end of the tube. The needle in the Reifenschweiler neutron generator is approximately 10 cm long, based on scaling the dimension given for the tube diameter (see page 70, 1<sup>st</sup> column, 3<sup>rd</sup> full paragraph).

As to the limitation regarding the specific distance between the extraction slit and the needle (i.e., 5 cm) this would be obvious as being part of optimization. See MPEP 2144.05 Part II.A.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus, as disclosed by Bernardet, by the teaching of Reifenschweiler, to include a needle of 10 cm long, with target inside said needle and exit slit approximately 5 cm from said needle, to gain the advantages thereof (i.e., increased neutron yield), because such modification is no more than the use of a well-known configuration within the nuclear art.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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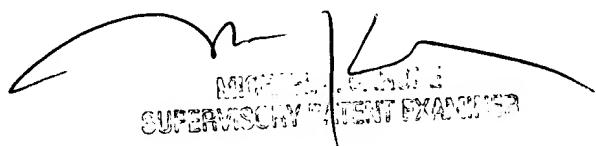
TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 703-306-5756. The examiner can normally be reached on 7:00-4:30, Mon-Fri; 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 703-306-4198. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

RJP  
April 28, 2003



MICHAEL J. CARONE  
SUPERVISORY PATENT EXAMINER